



TORCH

Safety Magazine of AETC

March 1997



ORM:

*Have You Assessed
The Risks?*



TORCH

The Torch is symbolic of Education and Learning

AETC's **TORCH**
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Gen Billy J. Boles Commander
Col Peter W. Tkacs Director of Safety
Lt Col Steven L. Babcock Publisher
Maj Mark A. Carter Editor
Mr. Sammie W. King Director of Design
Mr. David M. Stack Design Specialist
MSgt Dave Nolan Photojournalist

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FEATURES

- Risk Management: Assessing The Risks (Part 1 of 2)** 2
Part 3 in our ORM series
- 4,000 To 1: Not Good Odds** 14
Avoiding highway-rail crossing collisions
- Death Of An Innocent** 20
A drinking and driving tragedy

DEPARTMENTS

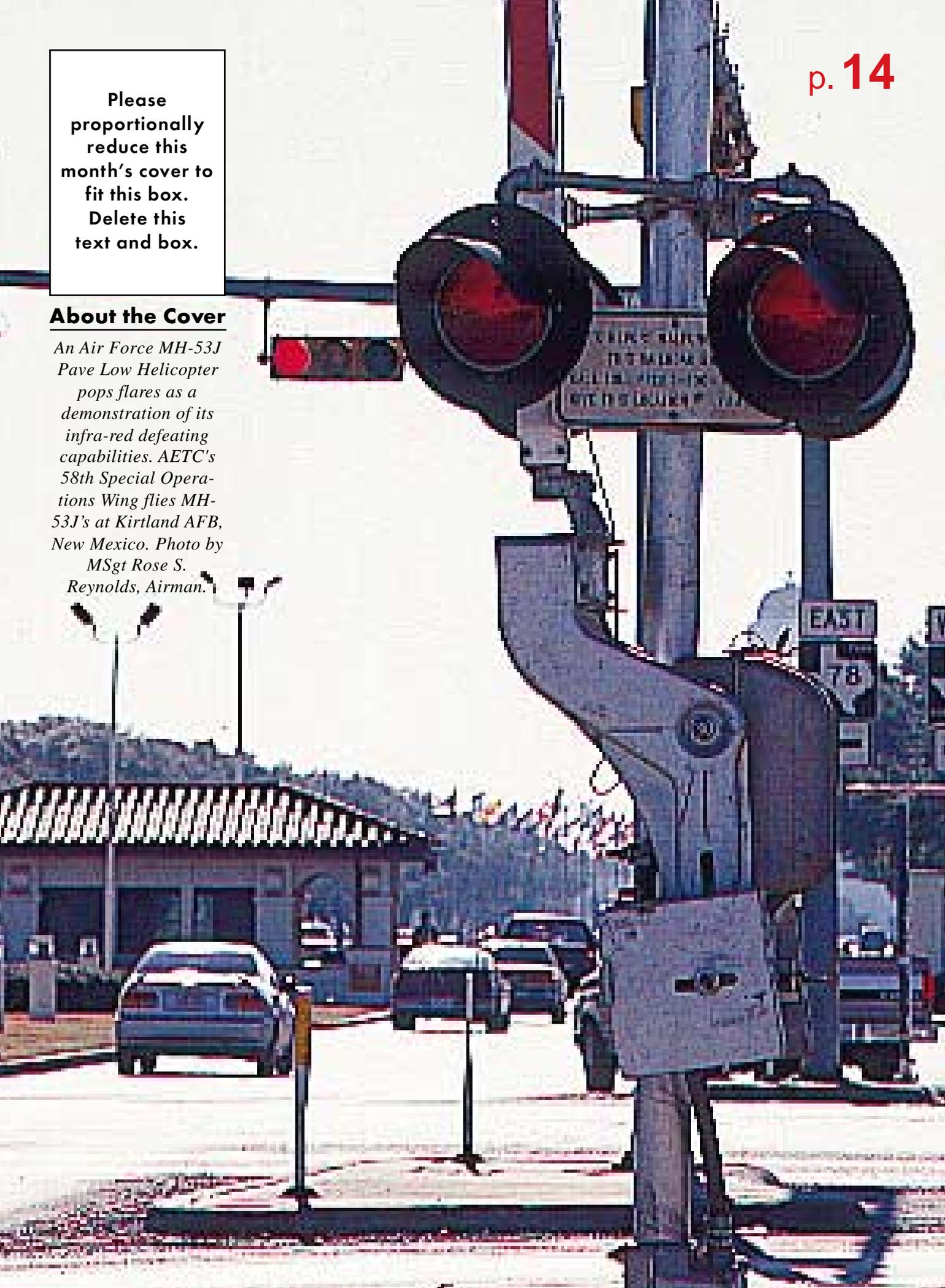
- TORCHTalk** 24
- Flight Safety**
- A Tail Of The Unexpected** 8
An unusual F-16 experience
- Ground/Weapons Safety**
- Only Once In 12,000 Times** 10
Good habits save the day
- Self-help Safety Alert** 12
Safety pitfalls and self-help projects
- A Better "Approach" To Ground Mishap Prevention** 18
A different look at teamwork
- The Threat Isn't Over Yet** 22
Staying vigilant against hypothermia



Please proportionally reduce this month's cover to fit this box. Delete this text and box.

About the Cover

An Air Force MH-53J Pave Low Helicopter pops flares as a demonstration of its infra-red defeating capabilities. AETC's 58th Special Operations Wing flies MH-53J's at Kirtland AFB, New Mexico. Photo by MSgt Rose S. Reynolds, Airman.



Risk Man

Assessing The Risks (Part 1 of

by Col Dave Roodhouse, HQ AETC/SEV, Randolph AFB



Figure 1

Last month, we delved into the first of six steps in the Risk Management process (Figure 1). This month, we'll begin to explore the nuances of assessing the risks posed by the hazards we worked so hard to identify.

Hmmm! Somehow, assessing risks brings to mind sleuthing, houndstooth

caps, and meerschaum pipes. Could it be we'll actually be performing a little detective work while assessing risk? Before we finish, you may have more in common with your favorite detective than you ever imagined.



agement: 2)

Where We're Headed

Remember — our ultimate purpose is to make benefit-cost tradeoffs in a mission context, making required risk decisions at an appropriate level. In this regard, risk assessment is a process of weighing the hazards and their cumulative effect on chances for mission success. The intent is to do this in a common sense way, minimizing unnecessary risk.

About now, you may be thinking, “I think I’ve got a handle on hazards, but what is this risk thing, anyway?” Well, there are three components of risk. The first component deals with how likely a specific event might be. Spraining your ankle playing basketball is a lot more likely than being struck by lightning. Next is the severity or possible consequences of an adverse event. Using the same example, a lightning strike is not very likely, but it would certainly get your attention if you were the hapless soul on the receiv-

ing end. The final factor is frequency of exposure. If you’re repeatedly exposed to a low likelihood event, the odds start to work against you. (Sounds like a trip to Las Vegas I dimly recollect.) Depending on your inclinations, you probably play basketball more often than you wander aimlessly in the middle of a thunderstorm.

Concept

Now that we have some ideas about the “risk” in Risk Management, how do we start assessing it? This is where the inquisitive mind is a great asset. We need to thoroughly review the expected sequence of events and the hazards associated with each step of the operation.

Our ultimate purpose is to make benefit-cost tradeoffs in a mission context.



by MSgt Dave Nolan



By MSgt Fernando Serna, AFFS

Use experience and judgment as a basis for asking the hard questions about the operation. This sets the stage for a more rigorous examination.

Use experience and judgment as a basis for asking the hard questions about the operation. This sets the stage for a more rigorous examination.

What we're really after here is an effective analysis of causation factors or the underlying reasons why things go awry. Once the causation factors are established, the next step is to quantify objective measures upon which we can make valid decisions. In the process, we may need some help from experts or technical references. We could also use sampling techniques or historical data. In any case, several factors should be considered when assessing risk:

- (1) *inherent dangers of the equipment*
- (2) *operational, working, and living conditions*
- (3) *proficiency, qualification, and experience at the individual and organizational levels*
- (4) *weather*
- (5) *condition of personnel*
- (6) *adequacy of the operating location*
- (7) *accident frequency*
- (8) *hazardous materials used*
- (9) *environmental concerns*
- (10) *supervision*
- (11) *complexity of mission*

(12) *operation or task*

(13) *level and adequacy of planning guidance and preparation*

(14) *availability of protective equipment*

(15) *familiarity with the mission.*

This list isn't all-inclusive, but you don't

have to check off each item either. The idea is to think about the mission in depth to brainstorm the things that could go wrong.

After this period of questioning, we want to rank order the hazard inventory. Since resources are always limited, the most significant hazards must be handled first. This is where objective measures become so important. We're talking about the distinction between perceptions and the real world here. Folks should not abandon or arbitrarily downgrade an assessment based upon personal beliefs or so called mission "criticality." Judgment will certainly come into play, but it shouldn't have a dominant role during this part of the process.

Next, you may need to develop a collection procedure that is simple, practical, and objective. This gives us a basis for quantifying risk for use in the decision process. The desired product of this step is a mission or operational risk assessment describing



the overall impact of the combined hazards. The result is a statement quantifying the risk associated with the operation. Assessments can be qualitative (subjective) or quantitative (numerical probability).

Tools

Obviously, this can get complicated in a hurry. Most of us need a little assistance getting our arms around all the issues in this kind of assessment. Fortunately, we have some help. The following are some methods and tools which could prove useful for your assessment (We'll cover the items in boldface in more detail this month and next; the remaining tools will be the subjects of later articles):

◆ **Matrices**

- *Basic Risk Assessment Code (RAC) matrix (AFI 91-301, p. 17)*
- *Stephenson 10x10 matrix*
- *Weighted special matrices*
- *Computer-based matrix tools (Army helicopter operations)*

◆ **Expected value tool**

◆ **Individual assessment tools**

- *Surveys*
- *Quizzes*
- *Inspections*
- *Weighted voting*



Assessments can be qualitative (subjective) or quantitative (numerical probability).

- *Risk exposure ratio method*
- *Frequency analysis*
- *Mission impact.*

There are many variations of a basic matrix which can help organize our thoughts. Figure 2 is a classic matrix. It combines the key factors of our risk assessment into one visual tool for decision-making. Recall the primary factors are likelihood, severity, and frequency. Since most of us have trouble

	Risk Exposure				
Effect	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	Extreme Risk	Extreme Risk	High Risk	High Risk	Medium Risk
Critical	Extreme Risk	High Risk	High Risk	Medium Risk	Low Risk
Moderate	High Risk	Medium Risk	Medium Risk	Low Risk	Low Risk
Negligible	Medium Risk	Low Risk	Low Risk	Low Risk	Low Risk

Figure 2



dealing with two dimensions, much less three, a “flat” matrix has evolved as a useful tool. The column for effects should be self-explanatory. The top row of the matrix gets a little trickier, and this is where the extra axis would have been useful. Of course, then you’d have to figure out what to put in the little squares! Anyway, there are two elements combined in the top row — the number of times an activity occurs combined with the implication of likelihood something adverse will happen. This combination of frequency and likelihood really amounts to risk exposure (harking back to our basketball-thunderstorm example). Doing something frequently that could have catastrophic consequences is labeled “Extreme Risk.” This could be due to broken equipment, inherent risks, training deficiency, or any number of factors. In this case, we would most likely change the way we are doing the activity, or not do it at all. Right now, we are simply portraying information to make that decision in a later step.

As we hinted earlier, this isn’t the only form of matrix available for your use. The number of rows and columns can be expanded to increase the “granularity” of your assessment. Either dimension could be described by a number scale which could be filled in with dollar costs, probabilities based on historical data, etc. Analogies of micrometers and meat cleavers come to mind right about now. You can also use a “weighting” arrangement where risk numbers are used instead of the descriptive terms. A series of these matrices can describe all aspects of your mission. Pull the appropriate

number from each matrix, add them up, and you have an indication of overall mission risk. Some units have used this system to elevate decisions to higher levels. Workshops are useful forums for developing these matrices and the decision criteria. More on that in a later article. Matrices have many applications, but we must emphasize these tools are not substitutes for good judgment. They simply organize a lot of information so we can make a more informed risk decision.

OK, everybody stand up and stretch. I know this isn’t necessarily thrilling stuff (I’m sure the rapier wit of the author has helped — not!), but if we don’t assess the risks we uncover, we’re essentially just running in place — burning some calories, but not getting very far. Hang in there, watch out for those risks, and come back safe and sound next month for part two of risk assessment. ✈

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for good
judgment.**



by MSgt Dave Nolan



A Tail Of The

by SSgt Rolla Suttmiller, 56th FW/PA, Luke AFB

In simple F-16 pilot lingo, “The turkey feathers were gone.”

After more than 1,400 hours in F-16s, Capt Dan Cotton, an instructor pilot with the 308th Fighter Squadron, had never experienced, or even expected, anything like this Monday afternoon flight and hopes he never will again.

Cotton and unit crew chief SrA Michael Catlett were flying over northwestern Arizona, nearing the end of their supersonic run, when things took a distinct turn, or rather dive, for the worse. They’d pulled some “Gs,” done a loop or two, and were accelerating at full afterburner when it happened.

“I felt this big jolt and thought, ‘Man, what was that?’,” said Cotton; “It felt like a round of anti-aircraft fire hit us. I couldn’t figure out what happened. I looked at the controls, and they were normal — but we were losing altitude. . .fast!”

Within two minutes, the jet dropped from 11,000 ft. to less than 3,000 ft.

“As soon as I heard and felt the explosion, I turned the jet around and put Luke on the nose,” Cotton continued. “We were 60-70 miles from the base, and I knew I wasn’t going to glide the thing back. The worst of it was, though, I just didn’t have a clue as to what was going on. All the controls were normal. . . I was giving it everything I could to try and stabilize it, but it just had no thrust. It was as if all its power was

by SrA Andrew N. Dunaway, II, CC

Unexpected

gone. I began to go down my checklist and try to get the jet to hold level, but that wasn't working either. When we hit 4,000 feet, I began to get scared."

He radioed the emergency to Albuquerque Center and Luke Tower and told Catlett they might have to bailout.

"I just couldn't believe this was happening to me," said Catlett. "Just my luck, I thought. Even though I'd prepared myself — knew all about the ejection seat and egress training — I was scared, very scared. I'd never ridden in an F-16 before, but I knew just from working on the jet that this was not normal."

According to Capt Cotton, most engine emergencies aren't this complex. After one or two steps in the checklist, the problem is usually corrected or stabilized, but he'd already followed the checklist. He'd been teaching these exact steps to student pilots for 18 months, and they just weren't working.

"No one wants to jump out of a jet," explains Cotton. "I wanted to make sure if I let an \$18 million jet go into the desert, I was going to do everything I possibly could to save it first."

It wasn't until he put the engine into secondary that the jet began to hold steady. He was then able to maintain 3,000 feet. If the aircraft hadn't leveled, Cotton and Catlett would've been one step closer to ejection. About this time, another

308th aircraft joined on the crippled jet, lending some much needed support.

"He came on the radio and said, 'Your entire afterburner is gone'," Cotton said. "All I could say to that was, 'You've got to be kidding!'"

At this point, Cotton's jet was still 50-60 miles out, traveling low and slow, but burning fuel at a very high rate: "I just kept my eyes on the fuel gauge. . . . The whole thing took 15 minutes from explosion to landing, but those first couple of minutes were the worst. Twenty seconds more — we were bailing!" declares Cotton.

According to the 308th, this is an unusual occurrence, and it's not detectable from the cockpit. If the afterburner section is blown from the aircraft, the pilot can't see it, and there are no cockpit indications to confirm what happened.

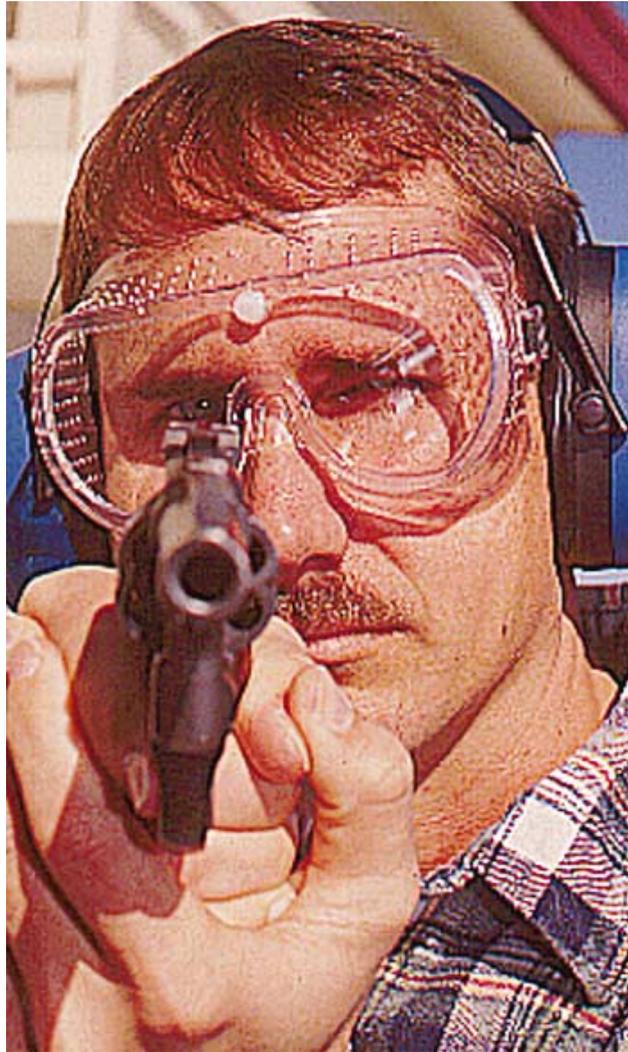
In the flying business, it certainly pays to practice for emergencies and be ready for anything — especially the occasional "unusual occurrence" — if you want to keep your tail feathers intact. ✈

"He came on the radio and said, 'Your entire afterburner is gone'," Cotton said. "All I could say to that was, 'You've got to be kidding!'"



by SrA Denny Lester, Luke AFB

Only Once In



by MSgt Rose S. Reynolds, Airman

ational activity. This type of shooting requires a large amount of practice with a large number of rounds fired in frequent practice sessions. Unless you're a wealthy man, which I most certainly am not, you must reload your own ammunition. Reloading is safe and fun, as long as you follow a few simple precautions: *no smoking, wear safety glasses while handling powder and primers, follow established load data, and **PAY ATTENTION** to what you are doing.*

Even though I'd never had any bad experiences while enjoying this sport, the use of safety glasses and hearing protection had become second nature, automatic. Through the course of loading and firing over 12,000 rounds in just over two-and-one-half accident-free years, I never really "needed" that safety equipment. . .until one fateful Sunday.

I was taking part in a match down in Texas. The day's shooting was nearly complete; we were finishing the last course of fire. The third time I pulled the trigger, I felt like someone hit me in the face with a bat! I had inadvertently

by MSgt
Harold E. Huard,
97th MXS/LGMT,
Altus AFB

Let me relate a recent experience, then you decide how important it is to use proper safety equipment.

Before I begin my tale, let me give you a little background information to help your understanding. I take part in practical pistol competition as a recre-

12,000 Times

double charged a cartridge (put in twice the normal powder charge) while helping a friend set up and adjust a new loading press.

When I fired that round, the shell ruptured due to the extreme internal pressure. When this happens, pressure will exit the firearm by the path of least resistance, which was rearward down the frame rails of the gun, directly into my face. I was hit so hard in the face by the blast of gas I thought I had been hit by something solid. I was also hit by small pieces of brass, lead, and unburned gunpowder from the ruptured cartridge.

After the initial shock, I started taking stock of my injuries: a pretty good bruise on my cheek, several small cuts on my face, and a bloody nose. Not too

bad considering what had just happened. After getting cleaned up and a little first aid (we happened to have a doctor shooting in our group), I didn't even need any serious medical attention.

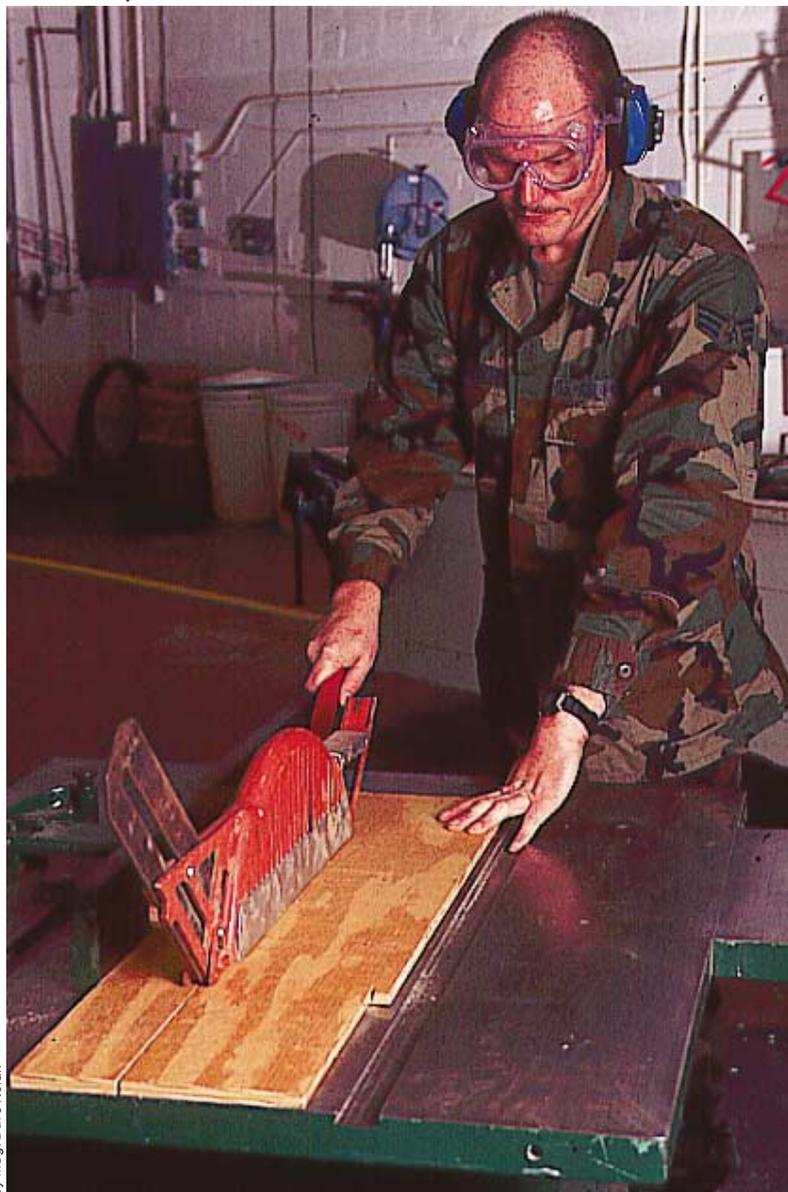
I was so used to wearing safety glasses I didn't even think about them until one of my friends walked up and said, "Thank God for good glasses, huh." Then it dawned on me — if I hadn't been wearing safety glasses, I almost certainly would've been blinded. The blast pattern on my cheek exactly matched the shape of my glasses, and a large chunk had been blown out of the left lens.

I only needed those glasses once in 12,000 times — thank goodness I had them on. 🐝

"When I fired that round, the shell ruptured due to the extreme internal pressure. When this happens, pressure will exit the firearm by the path of least resistance, which was rearward down the frame rails of the gun, directly into my face."



Self-Help Safety Alert



by MSgt Dave Nolan

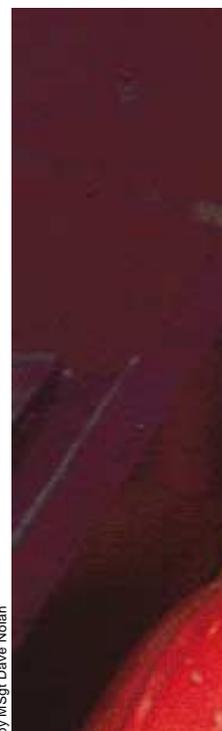
by Mr. Ken Jolley, HQ AETC/SEG, Randolph AFB

The Operations and Maintenance budget for Fiscal Year 97 doesn't look any too good. Risk Assessment Code (RAC) 4 and 5 occupational safety, fire, and health hazard corrective actions may not get funded due to the budget cuts; however, these RACs can often be

fixed with little to no money when self-help is used. Self-help is tempting, but doing things self-help can present its own challenges and actually increase the chances for mishaps and injuries.

Reminds me of a firefighter I got to know a few years ago. Now he was a firefighter, not a carpenter, but he was trying to do the right thing, improve the work area by using a table saw. He hadn't been trained on using the saw. . .never used one before. . .and he didn't even realize there was supposed—SUPPOSED—to be a blade guard on the machine. The saw wasn't government issue; it had been brought to work by a co-worker, who had no training on it either.

Anyway, so here's this guy trying to cut a big sheet of plywood with an unguarded saw blade adjusted to about 2.5 inches above the



by MSgt Dave Nolan

table—outdoors in a moderate wind—at work—by himself. The wind keeps trying to lift the plywood, so he holds the wood down on the table with his hand while he cuts it. No, I didn't misplace the modifier—he cut about half his hand off when he cut the plywood. I got to know this guy after the accident, after his hand was sewn back on. After hours and hours of surgery, he was still getting used to living with about half a functioning hand.

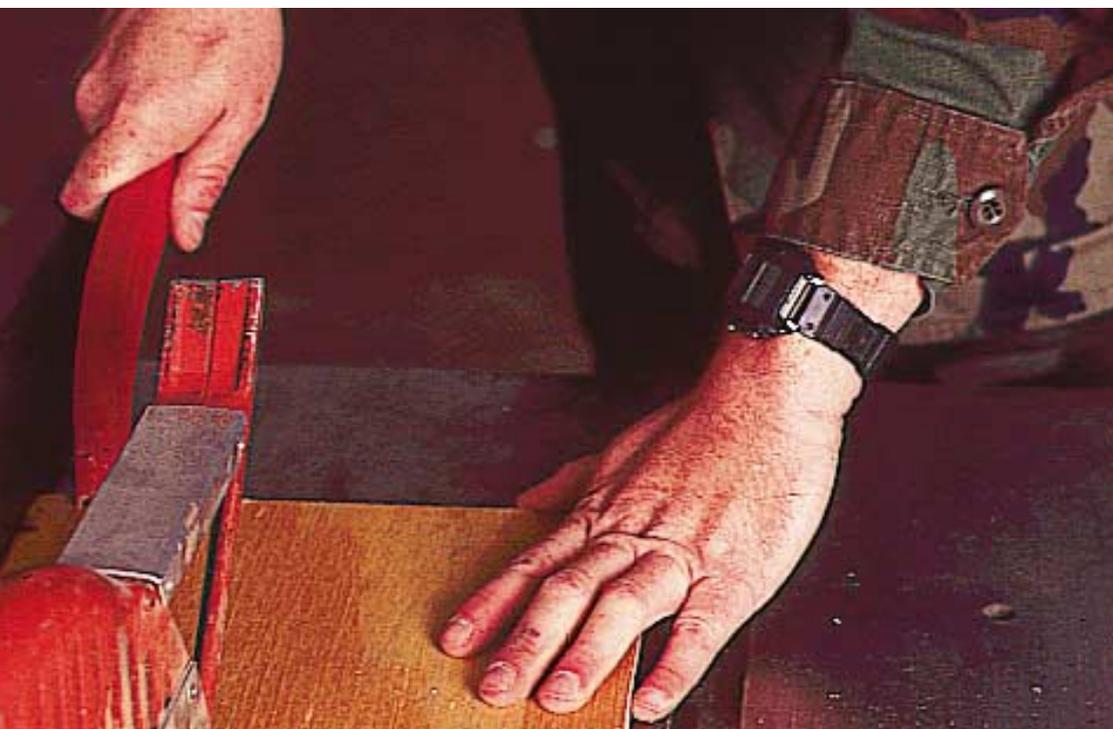
People do dumb things at home, getting hurt because they don't think enough about their own safety during their off-duty activities; however, at work, the supervisor is responsible for ensuring all workers are given safety training for all the jobs/tasks they're assigned. It's also important for a supervisor to know when to say no. It's simple—if they can't get safety train-

ing, they can't do it. And hey, if you, as a supervisor, don't know how to do something, how are you going to train them?

Never allow workers to bring power tools from home if the tools don't meet the same safety standards we demand of Air Force equipment. Ensure the tools are properly adjusted for the job, and don't allow workers to use equipment until they're trained to use it safely—and don't assume they are just because they own it.

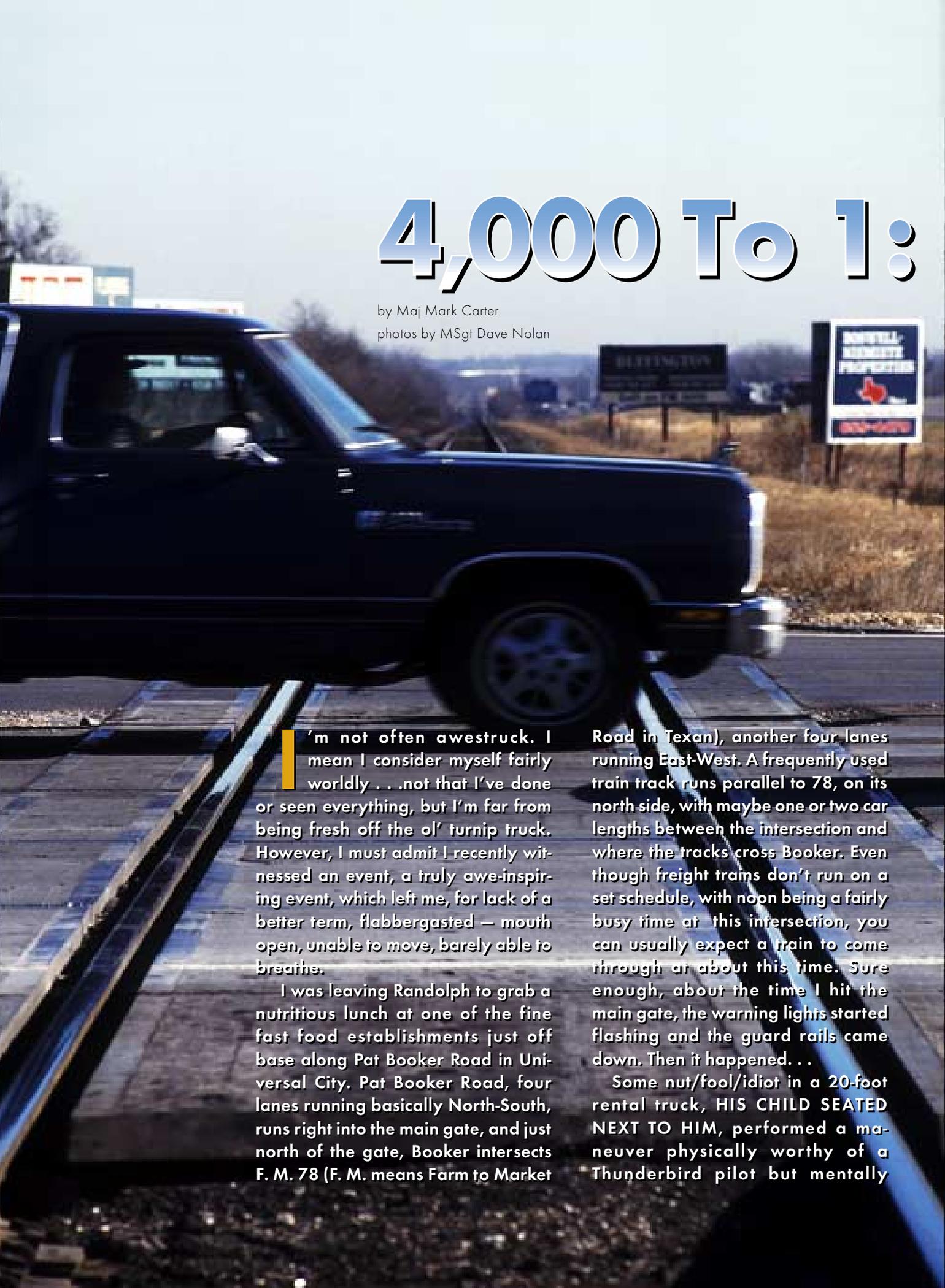
If you're going to do self-help projects, plan your projects and talk your plans over with your safety managers. They may know of some additional requirements or be able to steer you to some good safety training aids. Safety folks would much rather help you get it right than investigate your mishaps. ✈

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4,000 To 1:

by Maj Mark Carter
photos by MSgt Dave Nolan



I'm not often awestruck. I mean I consider myself fairly worldly . . . not that I've done or seen everything, but I'm far from being fresh off the ol' turnip truck. However, I must admit I recently witnessed an event, a truly awe-inspiring event, which left me, for lack of a better term, flabbergasted — mouth open, unable to move, barely able to breathe.

I was leaving Randolph to grab a nutritious lunch at one of the fine fast food establishments just off base along Pat Booker Road in Universal City. Pat Booker Road, four lanes running basically North-South, runs right into the main gate, and just north of the gate, Booker intersects F. M. 78 (F. M. means Farm to Market

Road in Texan), another four lanes running East-West. A frequently used train track runs parallel to 78, on its north side, with maybe one or two car lengths between the intersection and where the tracks cross Booker. Even though freight trains don't run on a set schedule, with noon being a fairly busy time at this intersection, you can usually expect a train to come through at about this time. Sure enough, about the time I hit the main gate, the warning lights started flashing and the guard rails came down. Then it happened. . .

Some nut/fool/idiot in a 20-foot rental truck, HIS CHILD SEATED NEXT TO HIM, performed a maneuver physically worthy of a Thunderbird pilot but mentally

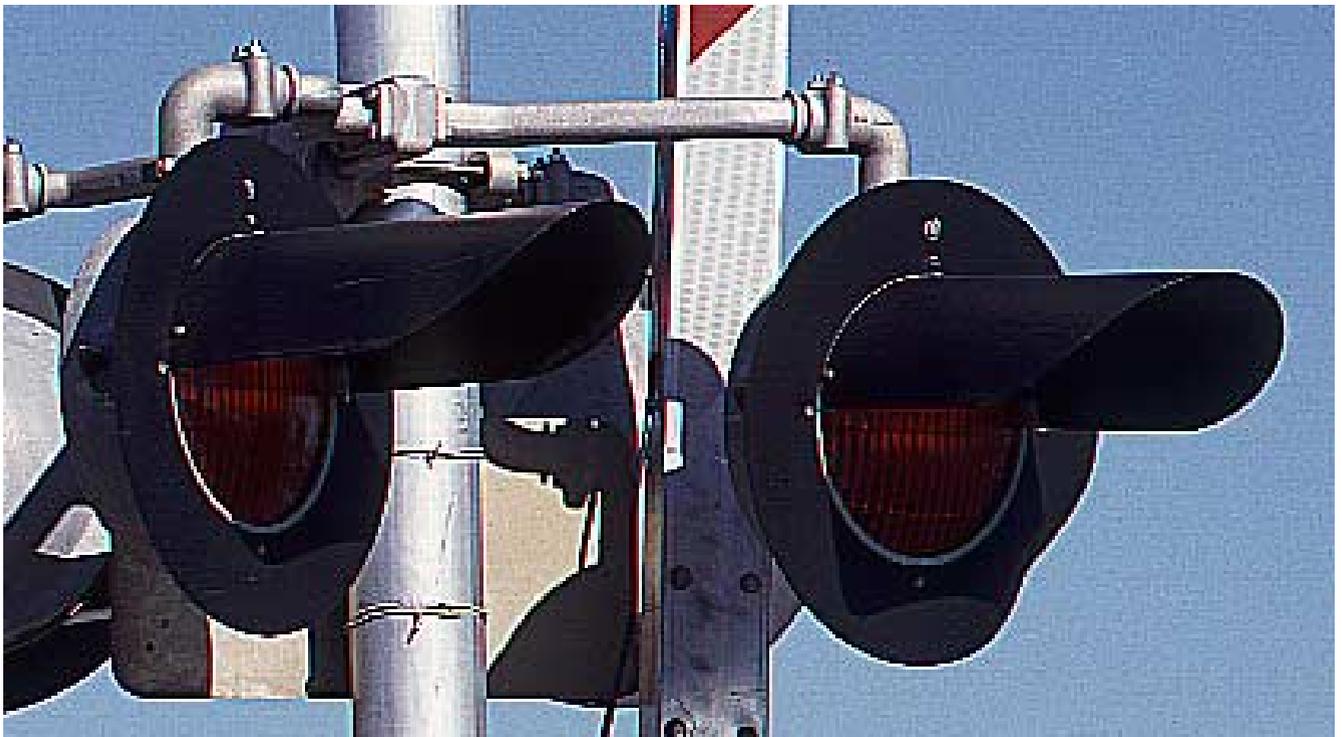
Not Good Odds

worthy of one of those turnips off the truck I didn't ride in on. This stupe couldn't wait the ten minutes it took the train to pass to get going north on Booker, so he pulled out of the turn lane, drove through and around traffic, pulled into the southbound side of Booker to go around the gate and signaling device, drove onto the railroad tracks, and finally turned into the northbound lanes on Booker — a truly amazing, absolutely stupid and stupefying S-maneuver which put not only the driver but his child in mortal danger from the train which was rapidly approaching. I can only imagine the engineer's thoughts as

he was applying the brakes and laying on the horn.

The problem is this type of behavior is all too common in this country. Testifying before the House Committee on Transportation and Infrastructure's Subcommittee on Railroads, Operation Lifesaver (a national organization working to alert the public to the dangers at highway-railroad crossings — and source of much of the information in this article) Executive Director Gerri L. Hall stated, "Research reveals that the public does not see trains as especially dangerous or life-threatening. . .if warning signals are flashing and no train

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"Research reveals that the public does not see trains as especially dangerous or life-threatening . . . if warning signals are flashing and no train is clearly in sight, drivers assume the train has left the scene or is still far in the distance."

is clearly in sight, drivers assume the train has left the scene or is still far in the distance." Hall also stated a crash between a vehicle and a train occurs nearly every 90 minutes in the US, and a person is 30 times more likely to die in a collision involving a train because of the sheer size and power of a train compared with highway vehicles: "There is no contest with a train. An automobile fares as well in a contest with a locomotive as a soda can under the wheel of a car."

That analogy is more true than you may realize. The weight ratio between a can of pop and the average car is approximately 4,000 to 1, which is just about the same ratio between the average car and the average 12 MILLION pound freight train. Yes, 12 million pounds is a good average for a freight train, and you don't just have the weight to consider. You also need to think about speed — 12 million pounds going 60 mph can't be stopped on a dime — that much tonnage going at that speed takes approximately 1.4 miles to stop, even with a brake on every wheel of the train.

Perhaps the most amazing thing is over half the vehicle-train collisions happen at crossings equipped with automatic signals (flashing lights or

lights and gates) primarily because some drivers choose to drive around the gates or through the flashing lights because they think they can beat the train. However, the optical illusion caused by the size of the train, the viewing angle, and the convergence of the tracks on the horizon makes a locomotive appear to be traveling much slower than it actually is.

To top it off, 25% of the crashes happen because people actually drive into the side of the train. Drivers are either driving too fast for the conditions (darkness, rain, fog, etc.), overdriving their headlights, are distracted, or are simply not paying attention. By the time they realize there's a train in front of them — it's too late to stop.

Operation Lifesaver offers the following safety tips to avoid highway-rail collisions:

Expect A Train On Any Track At Any Time — *Because most trains don't travel on set schedules, be cautious at a crossing at any time.*

Don't Get Trapped In A Crossing — *Never drive onto a crossing until you're sure you can completely clear the tracks. Once you've started across the tracks, keep going or don't start across at all.*



Never Drive Around The Gates — *If the gates are down, stop and stay in place. Don't cross until the gates are raised and the lights have stopped flashing. If you're at a multiple track crossing, don't proceed until you're sure there isn't another train coming on another track, especially from the opposite direction.*

Get Out Of Your Vehicle If It Stalls On The Tracks — *Get everyone out and off the tracks immediately. If a train is coming, make sure everyone is well clear of the tracks (angle away from the tracks in the direction the train is coming from since the debris will move in the direction the train is traveling). If no train is in sight, post lookouts and try to start the vehicle or push it clear. You should also consider calling 911 so the police and the railroad can be made aware of the situation.*

Never Race A Train — *Racing a train to a crossing may be the last foolhardy thing you ever do. You may never get a second chance if you lose a game of chicken with a train.*

Watch For Vehicles Which Must Stop At Crossings — *Be prepared to stop when you're following buses or other vehicles which are required to stop at rail crossings.*

Be Especially Watchful At Night — *At night it's particularly hard to judge speed and distance. If you have any doubts, it's better to be overly safe than sorry.*

For one reason or another, approximately 500 people are killed in highway-rail crashes each year in this country, and that's significantly down from previous totals thanks largely to educational programs and organizations like Operation Lifesaver. In fact, Operation Lifesaver will give presentations to virtually any interested group. Call them at 1-800-537-6224 for more information.

Until a motor vehicle-train collision occurs, circumstances are generally in the hands of the motor vehicle driver. The attentiveness or foolhardiness of the motor vehicle driver usually determines whether or not an accident will happen. Once a collision happens, the train is in control, all too often taking motor vehicle drivers on the last ride of their lives. All too often, the difference between life and death is a little more caution and common sense. Surely your life, or the lives of the ones you care about, is worth a bit more caution or the 10-15 minutes it may take for a train to pass. 🐝

Once a collision happens, the train is in control, all too often taking motor vehicle drivers on the last ride of their lives.



A Better “Approach” To Ground Mishap Prevention

by Lt Col
Marlon Johnston,
82nd TRW/SE,
Sheppard AFB

Just as a safe landing is often dependent on the type of approach you fly, the safe and successful completion of a ground task can be dependent on the approach you take.

The Initial Point

A worker in a T-38 egress shop brings an ejection seat into the shop for a periodic maintenance equipment inspection. He removes the left access panel, then the right, and he safes the 1007-4 initiator, the explosive device which begins the seat ejection sequence, on the right side, disconnecting the ejection handle from the initiator. At this point, the supervisor, diligently checking the work schedule board, realizes this seat is being worked out of the scheduled sequence. Interrupting the worker just prior to safing the left side,

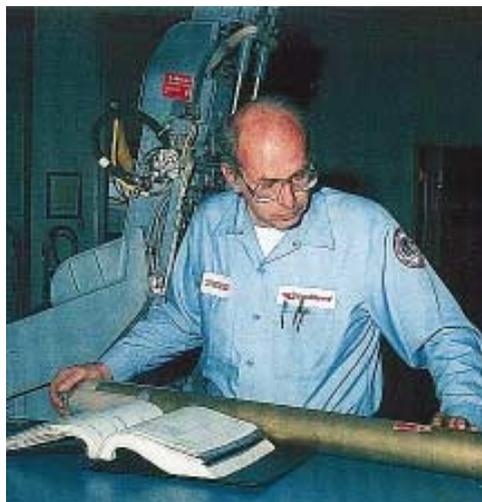
the supervisor directs the worker to stop this inspection, replace the access panels, return the seat to the storage room, and bring the scheduled seat in for inspection. The worker complies exactly—never safing the left-side 1007-4 initiator.

The Approach

Three days later, the partially-safed seat comes to the top of the list as scheduled, and the same worker brings it back into the egress shop. He first removes the left then the right access panels, recognizing the safe condition of the right-side initiator. For reasons unknown, he fails to recognize the armed condition of the left-side initiator. After removing the pilot’s “T” pin from the ejection handles, the worker raises the right ejection handle, which simultaneously raises the left-side ejection handle. Don’t you love the suspense?

The Full Stop

Slack in the mechanical linkage from the left-side ejection handle to the initiator allows enough play to avoid firing the initiator (Whew!). The worker then steps away from the seat to an adjacent work table to reference the technical order (T.O.). While this guy’s checking the T.O., another worker drops by to ask a question, bumping the left ejection handle. This slight bump moves the linkage enough to pull the initiator



*An Aircraft Ordnance
System Mechanic
inspects a 1007-4
initiator.*



connection, firing the left-side initiator. You got it—all initiators, except the safed, right-side, primary initiator, fire in sequence as advertised.

The Post-Flight

Fortunately, no one was killed or injured during the incident (unnerved—you bet), and only the initiators and connecting lines required replacement.

The Debrief

How could this happen? Even the worker doesn't know how he missed the left-side initiator not being safed. Could it be the non-typical configuration of the seat or the interruption of the normal work habit pattern? It's possible the worker, recognizing the safed right side, simply expected the left side to be safe. Considered in a larger context, it's possible a work-related or personal issue could've preoccupied or interrupted the worker's train of thought. Maybe he just got in a hurry. The explanation could lie in one, some, or all of the above.

As a supervisor, it's important to "know the process" and "know your people." When supervisors know their shop processes, their shop coworkers, and their subordinates, the work area be-

comes safer. This knowledge allows critical oversight when normal work processes are interrupted or modified and allows the opportunity to address issues such as complacency or pre-occupying problems. A good supervisor knows when someone needs encouragement to press on or a reminder to throttle back. Through a supervisor's awareness and involvement, achieving a well-managed, safe shop becomes a more attainable goal.

Coworkers also play a significant part in this process. Their familiarity with their fellow workers allows them to watch out for each other—it's the name of the game. Without this kind of teamwork, supervisors shouldn't be surprised to see an increased mishap rate, but by fostering teamwork, supervisors (and shops as a whole) set the course toward fewer mishaps and a more effective work area.

When supervisors use a well-considered teamwork approach to safety in their work environments—knowing the process and their people—they increase the prospects for safe and successful mission completion. Whether you're in the air or in the shop, that's what we're all about. ✈

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Death Of A

*I went to a party, Mom. I remembered what you said.
You told me not to drink, Mom, so I drank soda instead.
I really felt proud inside, Mom, the way you said I would.
I didn't drink and drive, Mom, though the others said I should.*

*I know I did the right thing, Mom. I know you're always right.
Now the party's ending, Mom, as they all drive out of sight.
As I got in my car, Mom, I knew I'd get home in one piece,
Because of the way you raised me, so responsible and sweet.*

*I started to drive away, Mom, but as I pulled into the road,
The other car didn't see me, Mom, and hit me like a load.
As I lay here on the pavement, Mom, I hear the policeman say,
The other guy is drunk, Mom, but I'm the one who'll pay.*

*I'm lying here dying, Mom. I wish you'd get here soon.
How could this happen to me, Mom? My life just burst like a balloon.
There's blood all around me, Mom, and most of it is mine.
I hear the medic say, Mom, I'll die in a short time.*

n Innocent

*I just wanted to tell you, Mom, I swear I didn't drink.
I swear it was the others, Mom. The others didn't think.
He was probably at the same party as I.
The only difference is, he drank, and I will die.*

*Why do people drink, Mom? It can ruin your whole life.
I'm feeling sharp pains now. Pains just like a knife.
The guy who hit me is walking, Mom, and I don't think it's fair,
I'm lying here dying, and all he can do is stare.*

*Tell my brother not to cry, Mom. Tell Daddy to be brave.
And when I go to heaven, Mom, put "Daddy's Girl" on my grave.
Someone should have told him, Mom, not to drink and drive.
If only they'd have told him, Mom, I might be still alive.*

*My breath is getting shorter, Mom. I'm becoming very scared.
Please don't cry for me, Mom. You were always there.
I have just one last question, Mom, before I say good-bye.
I didn't drink and drive, Mom, so why am I the one to die?*

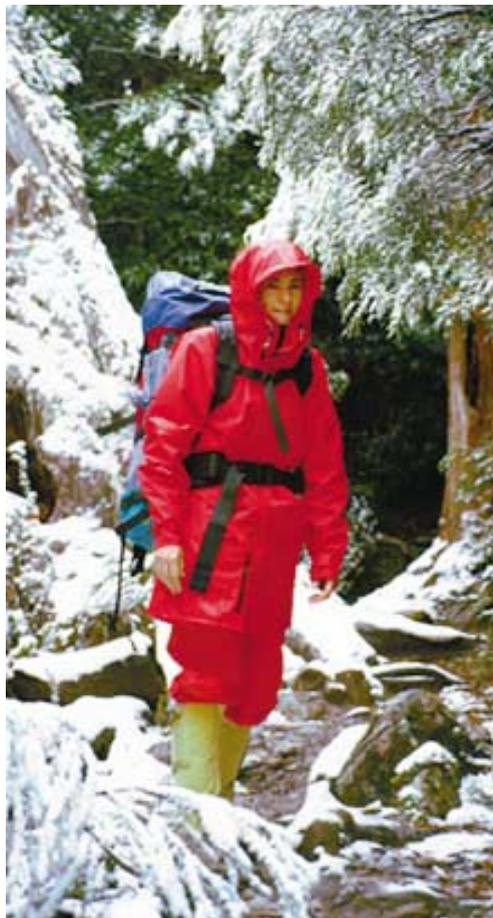
— Anonymous



The Threat Isn't Over Yet:

Protecting Against Hypothermia

**You or someone
you love can
suffer from
hypothermia
while indoors or
outdoors and
at any time of
the year.**

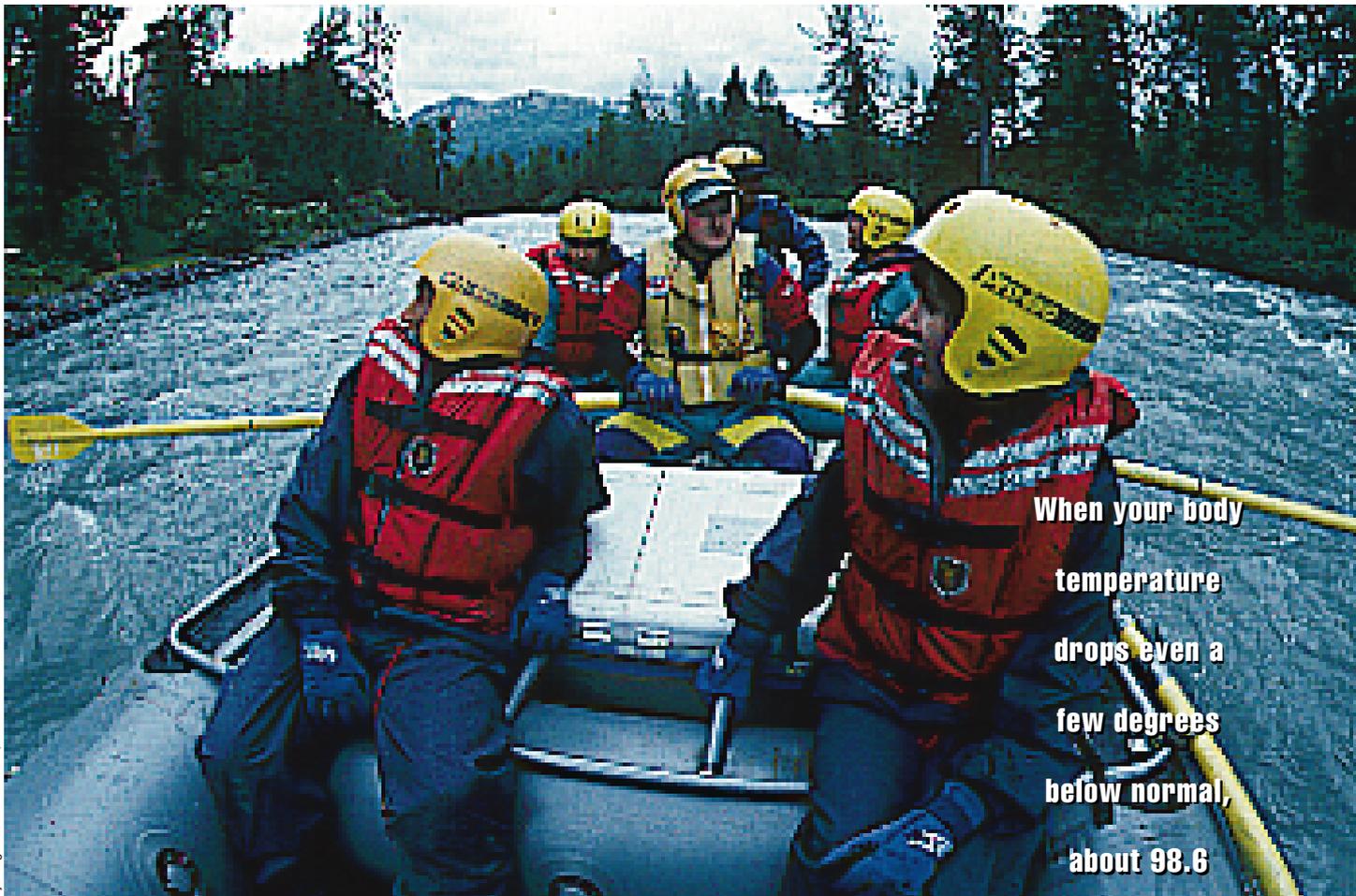


Just because old man winter is on the run, especially for those of you in southern climes, don't think you're out of the woods as far as the threat from hypothermia is concerned. You or someone you love can suffer from hypothermia while indoors (ask the Letterman audience) or outdoors and at any time of the year.

When your body temperature drops even a few degrees below normal, about 98.6 degrees F, you can begin to shiver uncontrollably, become weak, drowsy, disoriented, unconscious, even dead. This loss of body heat is known as "cold stress" or hypothermia. If you're going to be in colder, or potentially colder,

areas, you need to learn to protect against the loss of body heat—protect against hypothermia:

1) Dress In Layers — It always pays to dress in layers because you can then adjust what you're wearing to suit the temperature. In cold weather, wear a material like cotton next to your skin with wool layers over your undergarments. For outdoor activities, choose outer garments made



When your body temperature drops even a few degrees below normal, about 98.6

degrees F, you can begin to shiver uncontrollably, become weak, drowsy, disoriented, unconscious, even dead.

of waterproof, wind resistant fabrics such as nylon. And always wear a hat for added protection.

2) **Keep Dry** — Water chills your body far more rapidly than air or wind; falling into a 40 degree lake can be fatal in minutes, even in the heat of summer. Always take along a change of clothing whenever you'll be working or playing near a water source. Wear waterproof boots in damp or snowy weather, and always pack raingear.

3) **Take Along A Companion** — The effects of hypothermia can be gradual; they can go unnoticed until it's too late. If you know you're going to be exposed

to cold for an extended period, take along a companion to keep an eye on your condition. At the very least, let someone know where you'll be and when you should be back. If either of you starts showing any symptoms of hypothermia, warm up as soon as possible.

Hypothermia is not just a winter condition. You can go hypothermic anytime and anyplace you're subject to cooler temperatures—be it a desert night in April or October or the mountains in June or September. Don't let the cold stress you into the hospital (or worse) because you think winter's over. 

— courtesy of Parlay International

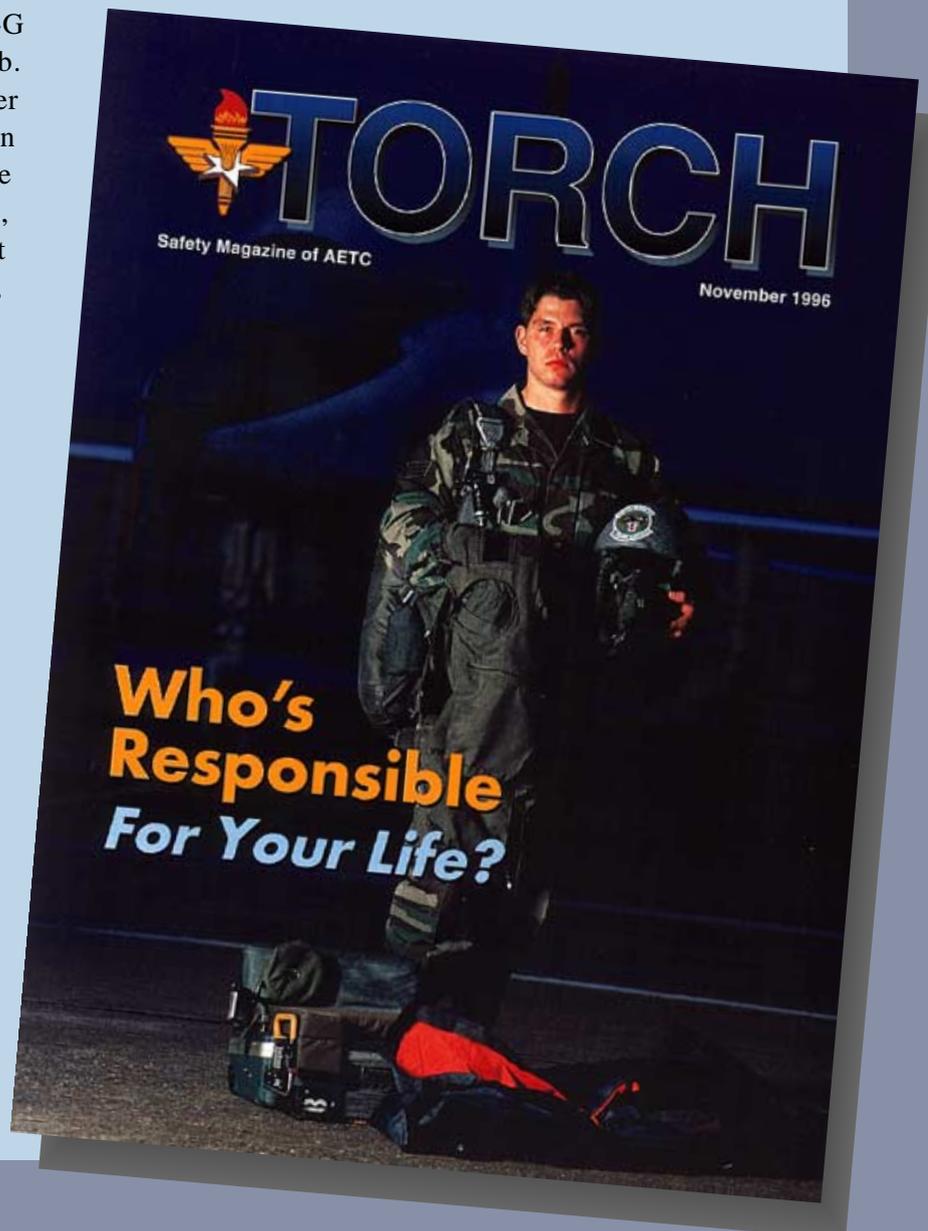
TORCHTalk

We received the following letter concerning our November cover story:

To whom it may concern,

Your recent article, "Who's Responsible For Your Life," was informative, but it left out one very important aspect: The Survival Equipment Shop. Take the front cover for example. The BA-22 parachute on the airman is our primary job, not theirs. They do very little maintenance to parachutes. The parachute rigger does all major and minor maintenance. The life raft is our primary job. They do a screening inspection, put the bottle on, and pack it. We test, modify, and make sure it passes inspection. The Anti-G suit is also our primary job. They fit it to the crewmember and do a bladder test then bring it to us to do all the modifications, replacements, and repairs. Other things not pictured that we do is inspect, repair, and repack life preservers and repair and maintain flight suits and flight jackets. There are many other things we do that people don't know about such as making all the aircraft covers and any other covers you see around base.

We, as Survival Equipment Specialists, are the ones tucked away in a remote corner of the base that people hardly ever see. The Life Support Specialists are the ones that usually get the credit for all the work, not the parachute rigger. But let something happen during an ejection



or bailout and the parachute rigger is the one who answers why there was a problem. Our work is only used in case of emergency and that's why we, as survival specialists, do everything we can to live up to our motto, "The last to let you down."

*Sincerely,
Todd Crockett, SSgt, USAF*

*It was certainly not the intent of either the article or **TORCH** to neglect the survival equipment shop or its people. I can still remember the feeling of uneasiness I got when they took the parachutes out of -135s, so believe me when I say your work and your comments are duly noted. I think I can safely speak for most if not all fliers when I say we greatly appreciate the work everyone involved with life support, survival, egress, and anyone else "behind the scenes" does to help support the missions, the training, and our general health and well-being. It's nice to know how many quality people are on our side, even if we don't acknowledge you as often as we should.*

*SSgt Crockett's letter, however, brings me back to a point I've been trying to make since I became editor: **TORCH** really isn't my magazine — it's yours. MSgt Nolan and I (the huge **TORCH** writing staff) simply cannot cover everything we'd like to cover. The money's not there, and we don't claim to be the experts in the field. I personally felt like last month's issue was too much the Mark Carter memorial (memorial?) issue, but we need your contributions to make sure that, or an over-emphasis on Randolph, doesn't happen again.*

So if you or your organization is doing something interesting in the safety line, write us an article. If you think we're short shrifting your shop, write us an article about what you do. If you have an idea for something we haven't covered yet, or to your satisfaction, write us an article.

I also know it's tough to write about incidents you've been involved in, incidents that possibly weren't particularly flattering or not exactly according to the regs, but if your story can keep someone else from doing something similar or even worse, the good you do through the article will far outweigh the embarrassment.

***Speaking of embarrassment**, those of you with sharp eyes were quick to point out the ring on our January cover. We obviously missed it in the fine print. **The policy is, of course, no rings on the flight line.** Good catch — good call. You keep watching, and we'll keep trying harder.*

*We listen to and read everything we get, so keep those cards, letters, calls, e-mail messages, and **ARTICLES** coming in.*

Be safe. — Ed.





Don't Let The Luck O' The Irish
Get Drowned By The Blarney
O' The Beer.

Celebrate St. Paddy's Day
sensibly and safely — if you do
imbibe, don't drink and drive.

Corned beef and cabbage and green beer,
while tasty,
don't make for a great last meal.